

**Notice of Allowability**

Application No.

09/923,157

Applicant(s)

YAMAMOTO ET AL.

Examiner

Ashok B. Patel

Art Unit

2154

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--**

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 04/28/2006.
2. ☒ The allowed claim(s) is/are 1,3,4,6,10-12,22 and 24-28.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some\* c) ☐ None of the:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
- (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
- 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
- (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☒ Information Disclosure Statements (PTO-1449 or PTO/SB/08),  
Paper No./Mail Date 3/4/2002
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413),  
Paper No./Mail Date \_\_\_\_\_
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other \_\_\_\_\_

  
JOHN FOLLANSBEE  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2100

### DETAILED ACTION

1. Claims 1, 3, 4, 6, 7, 10-12, 22 and 24-28 are allowed. Claims 2, 5, 8, 9,13-21 and 23 are cancelled.

### EXAMINER'S AMENDMENT

2. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Pavel Pogodin on 06/21/2006.

3. The application has been amended as follows:

In the claims:

a. Claims 2, 5, 8, 9,13-21 and 23 are cancelled.

b. Claim 1 (currently amended): A system comprising:

a plurality of data centers, including a first data center and a second data center, each data center comprising:

a storage system comprising a plurality of physical volumes storing information associated with at least one virtual volume; and

a host server;

a directory server comprising information on the first data center and the second data center and information on correspondence between the at least one virtual volume and the plurality of physical volumes of the storage system;

Art Unit: 2154

a plurality of access gateways;

a network interconnecting said plurality of data centers, said directory server, and said plurality of access gateways; wherein each of said plurality of data centers is accessible from at least one of said plurality of access gateways and wherein, responsive to input received via any one of said plurality of access gateways, the information about the first data center and the second data center is fetched from the directory server, the fetched information comprising proximity information for a source of said input and any of said plurality of data centers may be configured as a primary (source) of data, and any of said plurality of data centers may be configured as a secondary (target) of data in a copy operation based on the fetched information.

c. Claim 22 (currently amended): A system comprising:

a plurality of data centers, including a first data center and a second data center, each data center comprising:

a storage system comprising a plurality of physical volumes storing information associated with at least one virtual volume; and

a host server;

a directory server comprising information on the first data center and the second data center and information on correspondence between the at least one virtual volume and the plurality of physical volumes of the storage system;

a plurality of access gateways;

a network interconnecting the plurality of data centers, the directory server, and the plurality of access gateways; wherein each of the plurality of data centers is

Art Unit: 2154

accessible from at least one of the plurality of access gateways and wherein, responsive to input received via any one of the plurality of access gateways, the directory server is operable to furnish information on the first data center and the second data center, the furnished information being indicative of a proximity of the one of the plurality of access gateways associated with the received input and at least one data center and any of the plurality of data centers is operable to initiate a bi-directional data copying operation with any other of the plurality of data centers.

#### **REASONS FOR ALLOWANCE**

4. The following is an examiner's statement of reasons for allowance:

Applicant's arguments provided on page 9 in Applicant's response dated 04/28/2006 against the claims 1 and 22 in addition to "proximity information" and "information being indicative of a proximity" respectively along with other claim limitations are persuasive. None of the prior arts of record teach or fairly suggest the claimed limitations.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ashok B. Patel whose telephone number is (703) 305-2655. The examiner can normally be reached on 8:00am-5:00pm.

Art Unit: 2154

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John A Follansbee can be reached on (703) 305-8498. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

\*\*Abp

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